Research Article

Health-seeking behavior and social stigma for tuberculosis in tuberculosis patients at a tertiary-care center in North West India

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Received February 6, 2016. Accepted February 13, 2016

Abstract

Background: Tuberculosis is a classical example of a disease with both medical and social dimensions. Nonadherence to treatment often results from inadequate knowledge or understanding of the disease prevention and its treatment and social stigma attached to disease itself.

Objective: To know the health-seeking behavior and social stigma for TB and assess knowledge and awareness about TB prevention and sputum disposal practices among TB patients.

Materials and Methods: A cross-sectional, questionnaire-based, epidemiological study was conducted in 510 TB patients of age group 16–78 years for 9 months in a tertiary-care hospital, Bikaner, Rajasthan.

Result: Of 510 patients, 335 (65.7%) were male subjects aged from 16 to 78 years, 385 (75.4%) were from rural area, 370 (72.5%) were illiterate, 475 (93.1%) belonged to Hindu religion, and 345 (67.6%) had less than Rs. 1,500 per capita income. Majority of patients (84.3%) responded that TB is curable and TB patients can line normal life, but about half of patients ashamed of having TB. About 75.4% patients hide the TB because people will avoid them. About 99% of them told that they will treat their spouse if they develop TB. About 66.6% respondents think that TB can be prevented by proper treatment of the patients. About 28.43% patients do not practice anything for prevention of TB in family. About 50.3% patients used to dispose their sputum in dustbins, but 21.3% do not know about the practice of sputum disposal. Indiscriminate spitting practice was more in female (20%) than male patients (8.3%), more in rural (15.5%) than urban patients (2.4%), and more in illiterate (14.3%) than literate patients (7.1%). Majority of (85.3%) patients sought medical consultation before reporting to our center, and cough was the main symptom for seeking medical consultation (82.3%). Before reporting to our center, more than half of the patients (59.80%) preferred private practitioner for the treatment of their illness. But, majority of them wanted to have further treatment for TB from government health facilities. Illiteracy and rural residence and female sex significantly impacted the knowledge and awareness of TB in negative direction.

Conclusion: Apart from the multidrug therapy, poor knowledge, awareness, and understanding regarding TB prevention and treatment among TB patients is an alarming sign for the nation. There is a strong need to modify or more robust Information Education and Communication activities for the TB patients, especially in rural and illiterate populated areas and remove the social stigma attached to it, which makes the TB patients come forward for seeking their treatment part.

KEY WORDS: Tuberculosis, social stigma TB, health-seeking behavior TB, sputum disposal practice TB

Access this article online	
Website: http://www.ijmsph.com	Quick Response Code:
DOI: 10.5455/ijmsph.2016.23012016371	

Introduction

Tuberculosis (TB) is one of India's major public health issues. India accounts for almost one-fifth of the worldwide TB burden. Every day, in India, over 20,000 people acquire the disease, and over 1,000 departed owing to TB.[1] TB is the seventh most common cause of mortality worldwide.[2]

TB is a classical example of a disease with both medical and social dimensions, characterized by its close relation to poor socioeconomic status.[3] TB patients face psychosocial distress, and their fundamental rights may be voided. Among issues noted in TB patients, social stigma has been growingly identified. Social stigma is "an undesirable or discrediting attribute that an individual possesses, thus reducing that individual's status in the eyes of society."[4] India lingers far behind developed countries in controlling TB owing to social stigma linked to it. The stigma attached to TB adds to the burden of disease for both sex and even more so if they are of marriage-able age. While men have to deal with the stigma at their workplace and at the community level, women are faced with inferior complex within the household and in the immediate neighborhood. They are also inhibited in discussing their illness and participating in social functions owing to fear of becoming a neglected person.[5]

Health education always has a major role in control of any disease including TB. The ultimate aim of patient education is to effect or modify patient's health behavior by giving them with information that encourages them to follow the treatment plan.[6] Nonadherence to treatment often happens from insufficient knowledge or comprehension of the illness and its treatment.[7] On the other hand, increased knowledge about TB may elevate the acceptance to the control measures with the resultant fall in the spread of the disease.[8] By educating the patients and eliminating their misbeliefs, patient agreement with treatment and spread of disease is inclined to get better.[9] Studies in different parts of the world revealed misconceptions and limited knowledge about the prevention and health-seeking behavior of TB and sputum disposal practices.[10,11]

The awareness and knowledge vary from place to place and a relationship exists between knowledge and prevention/compliance; so, it has some meaning to conduct this type of study in the remote area, especially in Northern Rajasthan. Hence, this study is a sincere effort to throw light on socio-demographic profile, knowledge and awareness of prevention and health-seeking behavior, and sputum disposal practices of TB among TB patients.

Materials and Methods

This descriptive, analytical, cross-sectional, epidemiological study was conducted for 9 months from April 2010 to January 2011 in the Department of Tuberculosis and Respiratory Diseases, SP Medical College, Bikaner, Rajasthan, India. The study was conducted in patients with TB when they visited outpatient department and admitted in TB ward. The sample size was 510. Sampling technique was simple random sampling with lottery method. A questionnaire was designed at the beginning of the study and pretested. It contained both open and close-ended questions. The patients were informed about the purpose of the study, and proper informed consent was taken. The study demographic variables were name, age, sex, religion, literacy, residence, occupation, and per capita income. The answers related to knowledge were evaluated as correct or incorrect or simple knowledge-based depending on questions.

Statistical Analysis

The responses given by the study group were compiled and assessed according to sociodemographic structure. The collected data were analyzed using SPSS software, version 20, and inferences were drawn using χ^2-test.

Result

Of 510 patients, 335 (65.7 %) were male subjects aged from 16 to 78 years. Majority of respondents (39.2%) were in the age group of 31–45 years. About 75.4% belonged to rural areas, and 72.5% were illiterate. Almost all female subjects were housewives, and majority of male subjects were farmers. Less than Rs. 1,500 was the per capita income of 345 (67.6%) patients [Table 1].

Table 2 shows that about 257 (50.3%) patients used to dispose their sputum in dustbins and 14.7% patients by burying or covering the sputum with soil. About 12.3% patients follow

Table 1: Distribution of patients according to demographic variable (n = 510)

Demographic variable	No. of patients	%
Sex		
Male	335	65.7
Female	175	34.3
Age group (years)		
15–30	165	32.4
31–45	200	39.2
46–60	100	19.6
>60	45	8.8
Religion		
Hindu	475	93.1
Muslim	35	6.9
Residence		
Rural	385	75.4
Urban	125	24.5
Education		
Illiterate	370	72.5
Literate	140	27.5
Per capita income (Rupees)		
< 1,500 per month	345	67.6
>1,500 per month	165	32.4
Occupation		
Farmer	175	34.3
Unskilled laborer	70	13.7
Housewives	150	29.4
Students	15	2.9
Unemployed	5	0.9
Other professions	95	18.6

Table 2: Association between demographic variable and sputum disposal methods followed among TB patients

	Sputum disposal methods					
	Indiscriminate spitting	**Disposing in dustbins**	**Burning**	**Pouring boiled water in container**	**Burying/covering the sputum with soil**	**Do not know/ do not practice**
Total patients (*N* = 510)	63 (12.3)	257 (50.3)	5 (0.9)	0 (0)	75 (14.7)	110 (21.5)
Male (*n* = 335)	28 (8.3)	192 (57.3)	5 (1.4)	0 (0)	58 (17.3)	52 (15.5)
Female (*n* = 175)	35 (20)	65 (37.1)	0 (0)	0 (0)	17 (9.7)	58 (33.1)
P#	<0.001**	<0.001**	>0.05	–	<0.05*	<0.001**
Rural (*n* = 385)	60 (15.5)	170 (44.1)	5 (1.2)	0 (0)	61 (15.8)	100 (25.9)
Urban (*n* = 125)	3 (2.4)	87 (69.6)	0 (0)	0 (0)	14 (11.2)	10 (8)
P#	<0.001**	<0.05*	>0.05	–	<0.05*	<0.001**
Illiterate (*n* = 370)	53 (14.3)	155 (41.8)	5 (1.3)	0 (0)	25 (6.7)	88 (23.7)
Literate (*n* = 140)	10 (7.1)	102 (72.8)	0 (0)	0 (0)	50 (35.7)	22 (15.7)
P#	<0.05*	<0.05*	>0.05	–	<0.001**	<0.05*

#*P* value is calculated by χ^2-test.**$P < 0.001$, highly significant; *$P < 0.05$, significant; $P > 0.05$, not significant.

Table 3: Gender-wise distribution of TB patients for assessment of social stigma and prevention practice of tuberculosis

Questions for knowledge and awareness	**Total patients, (*N* = 510), *N* (%)**	**Male patients, (*N* = 335), *N* (%)**	**Female patients, (*N* = 175), *N* (%)**
TB is curable	430 (84.3)	275 (82.1)	155 (88.6)
Do you think a patient of TB can live a normal life	355 (69.6)	240 (71.6)	115 (65.7)
Would you be ashamed of having TB	265 (51.9)	170 (50.7)	95 (54.3)
Have you ever had a friend, neighbor, or relatives with TB visited his/her home			
Yes	255 (50)	180 (53.7)	75 (42.9)
Visited his/her home	195 (38.2)	125 (37.3)	70 (40)
Not visited because of fear of disease	55 (10.7)	50 (14.9)	5 (2.9)
Why people hide TB			
Social stigma	155 (30.3)	100 (29.9)	55 (31.4)
Fear of losing friends	0 (0)	0	0
Fear of losing job	5 (0.9)	0	5 (2.9)
People will avoid them	385 (75.4)	270 (80.6)	115 (65.7)
No one will marry them	10 (1.9)	10 (3)	0
Others	80 (15.6)	40 (11.9)	40 (22.9)
What would be your reaction if your spouse develops TB soon after marriage			
Sympathetic	15 (2.9)	15 (4.5)	0
Get him/her treated	505 (99)	335 (100)	170 (97.1)
Furious	5 (0.9)	5 (1.5)	0
Leave him/her to in-laws	0 (0)	0	0
Leave him/her	0 (0)	0 (0)	0 (0)
TB can be prevented by			
Proper treatment of patients	340 (66.6)	250 (74.6)	90 (51.4)
Good diet	115 (22.5)	60 (17.9)	55 (31.4)
Stopping alcohol	25 (4.9)	15 (4.5)	10 (5.7)
Isolation of patients	50 (9.8)	45 (13.4)	5 (2.9)
Others/do not know	40 (7.8)	10 (3)	30 (17.1)
How do you practice for prevention of TB			
Use of separate utensils	165 (32.3)	100 (29.9)	65 (37.1)
Self-isolation	240 (47)	175 (52.2)	65 (37.1)
Covering face while coughing	120 (23.5)	70 (20.9)	50 (28.6)
Safe sputum disposal	75 (14.7)	58 (17.3)	17 (9.7)
Do not know/do not practice	145 (28.4)	75 (22.4)	70 (40)

Table 4: Health-seeking behavior for TB among TB patients in tertiary-care hospital, North West Rajasthan, India

Questions for knowledge and awareness	Total patients, (*N* = 510), *N* (%)	Male patients, (*N* = 335), *N* (%)	Female patients, (*N* = 175), *N* (%)
For what symptom seek medical consultation			
Cough	420 (82.3)	280 (83.6)	140 (80)
Fever	175 (34.3)	115 (34.3)	60 (34.3)
Shortness of breath	140 (27.4)	88 (26.3)	52 (29.7)
Weight loss	60 (11.7)	39 (11.6)	21 (12)
Hemoptysis	40 (7.8)	26 (7.8)	14 (8)
Chest pain	80 (15.6)	50 (14.9)	30 (17.1)
Others	0 (0)	0 (0)	0 (0)
Medical consultation sought prior to reporting to our center			
Yes	435 (85.3)	283 (84.5)	152 (86.8)
No	75 (14.7)	52 (15.5)	23 (13.1)
Reasons for not seeking medical consultation			
Became better	5 (0.9)	3 (0.9)	2 (1.1)
Economic reasons	50 (9.8)	35 (10.4)	15 (8.6)
Self-medication	20 (3.9)	14 (4.2)	6 (3.4)
Too busy	0 (0)	0 (0)	0 (0)
Fear of TB	0 (0)	0 (0)	0 (0)
Fear of doctor	0 (0)	0 (0)	0 (0)
Duration of illness when medical consultation sought (days)			
<15	200 (39.2)	130 (38.8)	70 (40)
15–30	155 (30.3)	102 (30.4)	53 (30.3)
>30	155 (30.3)	103 (30.7)	52 (29.7)
Where was medical consultation sought			
Local health center	200 (39.2)	131 (39.1)	69 (39.4)
Private practitioner	305 (59.8)	201 (60)	104 (59.4)
Traditional faith healer	0 (0)	0 (0)	0 (0)
Indigenous medicine	5 (0.9)	4 (1.2)	1 (0.6)
Like to have TB treatment from			
Government health facilities	420 (82.3)	277 (82.7)	143 (81.7)
Private practitioner	90 (17.6)	58 (17.3)	32 (18.3)

indiscriminate spitting, and 21.3% do not know about the practice of sputum disposal. Indiscriminate spitting practice was more in female (20%) than male patients (8.3%), more in rural (15.5%) than urban patients (2.4%), and more in illiterate (14.3%) than literate patients (7.1%). The disposition of the sputum in dustbin is more in male (57.3%) than female (37.1%), more in urban (69.6%) than rural (44.1%), and more in literate (72.8%) than illiterate (41.8%) patients. All the above mentioned findings were statistically significant ($P < 0.05$) [Table 2].

In our study, majority of the patients (84.3%) responded that TB is curable, and 88.12% told that patient of TB can live a normal life, whereas half of patients (51.9%) agreed that they feel ashamed of having TB. About 255 (50%) of 510 respondents had a friend, neighbor, or relative with TB. Of them, 23.6% of patients not used to visit their home. When asked about the reasons of not visiting the diseased person's home, 91.6% of these patients replied that they have fear of disease. When we asked about hiding the disease, majority (75.4%) responded that if they disclose the disease, then people will start avoiding them, and the second reason was social stigma (30.3% patients). When we asked about the reaction if spouse of respondents develop TB, 99% told that they will treat their spouse, 0.9% will get furious, and 2.9% will be sympathetic to their spouse.

About 340 (66.6%) respondents think that TB can be prevented by proper treatment of the patients, whereas 115 (22.5%) respondents relied on good diet and 50 (9.8%) by isolation of the TB patients. When asked about the practices for the prevention of TB in family by the patients, 32.3% replied that they use separate utensils, 47.0% patients keep themselves isolated from family, 23.5% cover the face while coughing, and 14.7% by safe sputum disposal. About 28.43% patients do not practice anything [Table 3].

In our study, 420 (82.3%) patients sought medical consultation owing to cough, while 175 (34.3%) patients took medical consultation because of fever, followed by shortness of breath (27.4%),weight loss (11.7%), hemoptysis (7.8%), and chest pain (15.6%). Majority of patients [435 (85.3%)] sought medical consultation before reporting to our center, but 14.7% did not consult anywhere because of economic reason (9.8%) and self-medication (3.9%). It was observed that 200 (39.21%) patients sought medical consultation within 15 days of their illness, whereas 155 (30.39%) patients consulted after 1 month of their illness. About 305 (59.8%) patients went to private practitioner for seeking medical consultation, while 200 (39.2%) went to local health center, and only 5 (0.9%) patient preferred indigenous medicines. Majority of the patients (82.3%) preferred government health center for treatment of TB, whereas only 17.6% patients preferred private practitioner for the same [Table 4].

Discussion

TB causes enormous burden of disease and death around the world, especially in developing countries such as India. Lack of knowledge and awareness about the disease may lead to misconceptions and attitude about the disease, which subsequently forms a stigma that further leads to disease in a worst form.

Maximum numbers of respondents were in the age group 31–45 years (39.2%), which is an economically productive age group for the society. In our study, majority of the respondents were from rural area (75.4%). When we considered the educational status, 72.5% were illiterate respondents, indicating low educational status of the population in the locality. Female respondents were mostly illiterate. In our study, 67.6% patients were in < Rs. 1,500 per capita income group, which is very low socioeconomic status group. High rate of illiteracy and poverty are common findings among TB patients.[12] The social conditions which arise from poverty have been known to provide a favorable environment for the tubercle bacillus.

In this study, 88.12% respondents told that patient of TB can live a normal life, whereas one study done by Khuwaja and Mobeen[13] reported that only 31% respondents responded that TB patient can live a normal life. When asked about the reasons of not visiting the diseased person's home, 91.6% of patients replied that it is owing to fear of disease. This indicates the development of discrimination and stigma by society toward the patients. This stigma makes the patient to hide the disease and becoming ashamed of having TB. When we asked about hiding the disease, majority (75.4%) responded that if they disclose the disease, then people will start avoiding them, and the second reason was social stigma (30.3% patients). In India, patients of TB often experience rejection and social isolation. Because of the lack of knowledge about the disease and fear of being ostracized, persons with TB often hide their disease and fail to receive appropriate treatment, which creates major hurdle in the control of disease. Social factors play an important role in the management of TB patients. The stigma associated with the disease often leads to seeking delayed treatment and poor adherence to therapy.[14] A study done among active cases of TB has shown that, after their diagnosis became known, almost all patients felt that their family and friends will avoid or shun them. Patients responded to these attitudes by isolating themselves and becoming secretive about their disease.[15] Such nondisclosure by the patients in the family can be detrimental to the health of family members, the patients, and the community by spreading the disease because of avoidable delays in treatment. In a study done by Dhingra and Khan,[16] there was immense stigma at society level within 60% of patients hiding their disease. When we asked about the reaction if spouse of respondents develop TB, 99% told that they will treat their spouse, 0.9% will get furious, and 2.9% will be sympathetic to their spouse. In a study by Jaggarajamma et al.,[3] one-third of the TB patients were reluctant to attend social function owing to their illness. About 10.25% of the patients experienced negative reaction from the family members.

Although the Revised National Tuberculosis Control Program (RNTCP) has improved the stigma situation regarding TB, but still enough needs to be done to change the mindset of the patients and the society. Reducing stigma about TB can only break the barrier of having undisclosed TB patients who keep on spreading the disease. Once stigma is removed, these patients will reach by own will at the TB center for directly observed treatment, short-course (DOTS) treatment, and once effective treatment is started, these patients will become noninfectious within 2 weeks of start of DOTS therapy.

About 340 (66.6%) respondents think that TB can be prevented by proper treatment of the patients, whereas 115 (22.5%) respondents think that TB can be prevented by good diet, and 50 (9.8%) think that TB can be prevented by isolation of the patients. In a study done by Sharma et al.,[17] methods of prevention of TB told by the patients were treatment of patients (89.5%), cough hygiene (26.60%), hospitalization of the patients (25%), and use of separate utensils (9.10%). Yadav et al.[18] reported that 1.60% of respondents replied that isolation of TB patients can prevent the disease. When asked about the practices for the prevention of TB in family by the patients, 32.3% replied that they use separate utensils, 47% patients keep themselves isolated from family, 23.5% cover the face while coughing, safe sputum disposal was done by only 14.7%, and 28.4% patients do not practice anything. In a similar study done by Bhattacharyya et al.,[19] 78.3% use separate utensils for the prevention of TB in family, 50.8% isolate themselves from family, 46.7% cover the face while coughing, 20% patients use safe sputum disposal methods, and 21.7% of patients do not practice anything. Malhotra et al.[20] reported that separate utensils were used by 79.3%; other precautions included covering the mouth while coughing (46.6%) and proper sputum disposal (38.9%) for prevention of TB. It is clear that knowledge is very poor about the prevention of TB and methods of safe sputum disposal in the region.

In our study, about 82.3% of patients seek medical conjunction for cough, 34.3% for fever, 27.4% shortness of breath,

11.7% for weight loss, 7.8% for hemoptysis, and 15.6% for chest pain. In a study done by Christina et al.[21] 56.5% respondents sought medical advice for productive cough, 58% for cough > 2 weeks, 46.7% for fever, 50% for poor weight gain, and 4.35% for hemoptysis. In our study, 85.3% of patients were already taking medical consultation before reporting to our institute and 14.71% did not seek medical attention before reporting. When asked about the reasons for not seeking medical consultation, 66.6% told economic reasons, 26.6% told they were taking various self-medications, and 6.6% told they became better without any treatment. So, the financial reason is the main factor owing to poor socioeconomic status of the patients to delay in seeking medical care. In our study, 39.2% of patients sought medical consultation before 15 days of total duration of illness, 30.3% sought medical consultation when their illness was about 15–30 days, and after more than 30 days duration medical consultation was taken by 30.3% patients. This indicates that still a large number of patients are delaying seeking medical advice. In the study done by Sadiq and Muynck,[22] 77% patients sought medical care within 3 weeks and 23% after > 3 weeks. In this study, 39.2% patients approached local health center for the treatment of TB, 59.8% to private practitioner, and 0.9% took indigenous medicine. In a similar study done by Christina et al.,[21] 45.2% approached to local health center, 27.4% to family doctor, 17.7% to pulmonologist, and 56.5% to hospital. In another study done by Oluhadore Christopher and Bosede,[23] 34.7% patients chose government health center, whereas 34.7% chose private practitioner. When we asked that from where they would like to have TB treatment from, 82.3% patients chose government health center, whereas 17.6% chose private practitioner.

Private health care has been known to be preferred by 70%–80% of the TB patients in India. The reason for such preference have chiefly been the convenient consultation timing and location of private facilities, quicker institution of treatment, physician flexibility about patients concerns, and the respect for secrecy. However, there are many associated shortcomings, including incorrect diagnosis, inappropriate treatment regimens, tendency to overtreat, nonmaintenance of records, and nontracing of defaulters. Furthermore, treatment success rate has been estimated to be less than 50% in the private sector, and the patients have been observed to spend five to six times more money than the cost actually required for cure.

In this study, 51.9% of respondents felt shame for presenting TB. Male (33.3%) patients were more ashamed than female (18.63%) patients. Jittimanee et al.[24] studied the stigma about TB, they found that 23% of patients felt embarrassment in their family and 34% in their community. In a study done by Jaggarajammaa et al.,[3] one-third of the TB patients were reluctant to attend social function owing to their illness. These patients felt that others looked down upon them, and they were ashamed to cough in front of others. Patients with TB face being socially outcast with poor emotional quality of life, low self-esteem, and depression, which may even lead to suicidal tendency. Men affected by the disease who usually provide the financial support for his family are forced to leave their jobs and thus experience extreme debt and poverty. Other patients have a reduced capacity to work and have to take long leave of absence from work with the end result being financial crisis.

When asked about the practices related to sputum disposal, 50.3% of patients dispose the sputum in dustbins, 12.3% follow indiscriminate spitting, 0.9% by burning, 14.7% by covering the sputum with soil, and 21.5% patients do not practice any method at all. In a study done by Bhattacharyya et al.,[19] unsafe practices such as indiscriminate spitting was done by 50.8% and disposing in dustbin was done by 29.2%. Safe methods such as burning (15.8%) and pouring boiled water in the container (4.2%) were also observed. Unsafe method of sputum disposal was the predominant practice among the study subjects in our study. Indiscriminate spitting was significantly more in female patients, rural patients, and illiterate patients. This difference is statistically significant ($p < 0.05$). The literacy was an important factor for acquiring information and knowledge of sputum disposal in TB patients. The factor of literacy is confirmed by various studies in the knowledge of TB.[25,26] When residence of the respondents was taken in to consideration, then it is observed that urban group of patient showed more knowledge than the rural group patients. This difference was also statistically significant ($p < 0.05$). When gender was taken into consideration for the knowledge of TB, male patients showed more knowledge than the female patients, and the difference is statistically significant. Studies also found that there was gender difference in knowing TB as reported by Agboatwalla et al.[27] in Pakistan and Shetty et al.[28] in London. Knowledge of TB was generally deficient in women, particularly in rural women.

Conclusion

Of 510 patients, 335 (65.7%) were male subjects aged from 16 to 78 years; 385 (75.4%) were from rural area, 370 (72.5%) were illiterate, 475 (93.1%) belonged to Hindu religion, and 345 (67.6%) had less than Rs. 1,500 per capita income. Majority of patients (84.3%) responded that TB is curable and TB patients can line normal life but about half of patients ashamed of having TB. About 75.4% patients hide the TB because people will avoid them. About 99% told that they will treat their spouse if they develop TB. About 66.6% respondents think that TB can be prevented by proper treatment of the patients. About 28.43% patients do not practice anything for prevention of TB in family. About 50.3% patients used to dispose their sputum in dustbins, but 21.3% do not know about the practice of sputum disposal. Indiscriminate spitting practice was more in female (20%) than male patients (8.3%), more in rural (15.5%) than urban patients (2.4%), and more in illiterate (14.3%) than literate patients (7.1%). Majority of patients (85.3%) sought medical consultation before reporting to our center, and cough was the main symptom for seeking medical consultation (82.3%). Before reporting to our center,

more than half of the patients (59.80%) preferred private practitioner for the treatment of their illness. But, majority of them wanted to have further treatment for TB from government health facilities. Illiteracy and rural residence and female sex significantly impacted the knowledge and awareness of TB in negative direction.

Provision of DOTS to the affected patients is not the only solution in controlling TB because a large number of patients are expected to continue experiencing the disease owing to lack of awareness, social stigma, misconceptions, and discriminatory attitude toward them hampering their treatment-seeking behavior. Despite the existence of RNTCP, since last 10 years in this locality, the level of knowledge among people was not satisfactory. There is a strong need to strengthen the Information Education and Communication activities by mass media campaign, inclusion of information about TB in the textbooks, and by giving health education to the patients and their family members by health workers. Concerted efforts in educating the patients and their family members for attitude change, active measures for early identification, sustaining treatment, and minimizing defaulters through community participation are the need of the hour for controlling TB problem in the population.

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How to cite this article: Jangid VK, Agrawal NK, Yadav GS, Pandey S, Mathur BB. Health-seeking behavior and social stigma for tuberculosis in tuberculosis patients at a tertiary-care center in North West India. Int J Med Sci Public Health 2016;5: 1893-1899

Source of Support: Nil, **Conflict of Interest:** None declared.